RAW SEQUENCE LISTING   DATE: 08/30/2004
PATENT APPLICATION: **US/10/762,665**   TIME: 14:41:34

Input Set : **N:\Crf3\RULE60\10762665.raw.txt**
Output Set: **N:\CRF4\08302004\J762665.raw**

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 1 <110> APPLICANT: Fuchs, Renate
 2        Wilske, Bettina
 3        Motz, Manfred
 4        Soutscheck, Erwin
 5        Preeac-Mursic, Vera
 6 <120> TITLE OF INVENTION: Active proteins from Borrelia
 7        burgdorferi
 8 <130> FILE REFERENCE: 738.001US3
 9 <140> CURRENT APPLICATION NUMBER: US/10/762,665
10 <141> CURRENT FILING DATE: 2004-01-22
11 <150> PRIOR APPLICATION NUMBER: US/09/711,546
12 <151> PRIOR FILING DATE: 2000-11-13
13 <150> PRIOR APPLICATION NUMBER: US 09/196,293
14 <151> PRIOR FILING DATE: 1998-11-19
15 <150> PRIOR APPLICATION NUMBER: US 08/209,603
16 <151> PRIOR FILING DATE: 1994-03-10
17 <150> PRIOR APPLICATION NUMBER: US 07/862,535
18 <151> PRIOR FILING DATE: 1992-06-19
19 <150> PRIOR APPLICATION NUMBER: WO PCT/EP90/02282
20 <151> PRIOR FILING DATE: 1990-12-21
21 <150> PRIOR APPLICATION NUMBER: DE P40 18 988.0
22 <151> PRIOR FILING DATE: 1990-06-13
23 <150> PRIOR APPLICATION NUMBER: DE P39 42 728.5
24 <151> PRIOR FILING DATE: 1989-12-22
25 <160> NUMBER OF SEQ ID NOS: 16
26 <170> SOFTWARE: FastSEQ for Windows Version 4.0
28 <210> SEQ ID NO: 1
29 <211> LENGTH: 39
30 <212> TYPE: DNA
31 <213> ORGANISM: Borrelia burgdorferi
32 <400> SEQUENCE: 1
33        atgaccatga ttacgaattc ccggggatcc atcatgatt              39
35 <210> SEQ ID NO: 2
36 <211> LENGTH: 20
37 <212> TYPE: PRT
38 <213> ORGANISM: Borrelia burgdorferi
39 <400> SEQUENCE: 2
40        Glu Leu Asp Lys Glu Lys Leu Lys Asp Phe Val Asn Leu Asp Leu Glu
41        1               5                   10                  15
42        Phe Val Asn Thr
43                    20
45 <210> SEQ ID NO: 3
46 <211> LENGTH: 61
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47 <212> TYPE: DNA
48 <213> ORGANISM: Borrelia burgdorferi
49 <400> SEQUENCE: 3
50      garytdgaya argaraaryt daargaytty gtwaayytdg ayyadgartt ygtwaaytay      60
51      a                                                                     61
53 <210> SEQ ID NO: 4
54 <211> LENGTH: 346
55 <212> TYPE: DNA
56 <213> ORGANISM: Borrelia burgdorferi
57 <400> SEQUENCE: 4
58      atgaaaaaaa tgttactaat ctttagtttt tttcttgttt ttttaaatgg atttcctctt      60
59      aatgcaaggg aagttgataa ggaaaaatta aaggactttg ttaatatgga tcttgaattt     120
60      gttaattaca agggtcctta tgattctaca aatacatatg aacaaatagt aggtattggg     180
61      gagtttttag caaggccgtt gatcaattcc aatagtaagt caagttatta tggtaaatat     240
62      tttgttaata gatttattga cgatcaagat aaaaaagcaa gtgttgatat tttttctatt     300
63      ggtagtaagt cagagcttga tagtatatta aatctaagaa gaattc                    346
65 <210> SEQ ID NO: 5
66 <211> LENGTH: 663
67 <212> TYPE: PRT
68 <213> ORGANISM: Borrelia burgdorferi
69 <400> SEQUENCE: 5
70      Met Lys Lys Met Leu Leu Ile Phe Ser Phe Phe Leu Val Phe Leu Asn
71      1               5                   10                  15
72      Gly Phe Pro Leu Asn Ala Arg Glu Val Asp Lys Glu Lys Leu Lys Asp
73                      20                  25                  30
74      Phe Val Asn Met Asp Leu Glu Phe Val Asn Tyr Lys Gly Pro Tyr Asp
75                  35                  40                  45
76      Ser Thr Asn Thr Tyr Glu Gln Ile Val Gly Ile Gly Glu Phe Leu Ala
77          50                  55                  60
78      Arg Pro Leu Ile Asn Ser Asn Ser Asn Ser Ser Tyr Tyr Gly Lys Tyr
79      65                  70                  75                  80
80      Phe Val Asn Arg Phe Ile Asp Asp Gln Asp Lys Lys Ala Ser Val Asp
81                      85                  90                  95
82      Ile Phe Ser Ile Gly Ser Lys Ser Glu Leu Asp Ser Ile Leu Asn Leu
83                      100                 105                 110
84      Arg Arg Ile Leu Thr Gly Tyr Leu Ile Lys Ser Phe Asp Tyr Glu Arg
85                      115                 120                 125
86      Ser Ser Ala Glu Leu Ile Ala Lys Ala Ile Thr Ile Tyr Asn Ala Val
87          130                 135                 140
88      Tyr Arg Gly Asp Leu Asp Tyr Tyr Lys Glu Phe Tyr Ile Glu Ala Ser
89      145                 150                 155                 160
90      Leu Lys Ser Leu Thr Lys Glu Asn Ala Gly Leu Ser Arg Val Tyr Ser
91                      165                 170                 175
92      Gln Trp Ala Gly Lys Thr Gln Ile Phe Ile Pro Leu Lys Lys Asn Ile
93                      180                 185                 190
94      Leu Ser Gly Asn Val Glu Ser Asp Ile Asp Ile Asp Ser Leu Val Thr
95                      195                 200                 205
96      Asp Lys Val Val Ala Ala Leu Leu Ser Glu Asn Glu Ser Gly Val Asn
97          210                 215                 220
```

```
 98         Phe Ala Arg Asp Ile Thr Asp Ile Gln Gly Glu Thr His Lys Ala Asp
 99         225               230              235                   240
100          Gln Asp Lys Ile Asp Ile Glu Leu Asp Asn Phe His Glu Ser Asp Ser
101                        245              250              255
102          Asn Ile Thr Glu Thr Ile Glu Asn Leu Arg Asp Gln Leu Glu Lys Ala
103                        260              265              270
104          Thr Asp Glu Glu His Lys Lys Glu Ile Glu Ser Gln Val Asp Ala Lys
105          275              280              285
106          Lys Lys Gln Lys Glu Glu Leu Asp Lys Lys Ala Ile Asp Leu Asp Lys
107             290              295              300
108          Ala Gln Gln Lys Leu Asp Phe Ala Glu Asp Asn Leu Asp Ile Gln Arg
109          305              310              315                   320
110          Asp Thr Val Arg Glu Lys Leu Gln Glu Asn Ile Asn Glu Thr Asn Lys
111                        325              330              335
112          Glu Lys Asn Leu Pro Lys Pro Gly Asp Val Ser Ser Pro Lys Val Asp
113                        340              345              350
114          Lys Gln Leu Gln Ile Lys Glu Ser Leu Glu Asp Leu Gln Glu Gln Leu
115                        355              360              365
116          Lys Glu Ala Ser Asp Glu Asn Gln Lys Arg Glu Ile Glu Lys Gln Ile
117             370              375              380
118          Glu Ile Lys Lys Asn Asp Glu Glu Leu Phe Lys Asn Lys Asp His Lys
119          385              390              395                   400
120          Ala Leu Asp Leu Lys Gln Glu Leu Asn Ser Lys Ala Ser Ser Lys Glu
121                        405              410              415
122          Lys Ile Glu Gly Glu Glu Glu Asp Lys Glu Leu Asp Ser Lys Lys Asn
123             420              425              430
124          Leu Glu Pro Val Ser Glu Ala Asp Lys Val Asp Lys Ile Ser Lys Ser
125             435              440              445
126          Asn Asn Asn Glu Val Ser Lys Leu Ser Pro Leu Asp Glu Pro Ser Tyr
127             450              455              460
128          Ser Asp Ile Asp Ser Lys Glu Gly Val Asp Asn Lys Asp Val Asp Leu
129          465              470              475                   480
130          Gln Lys Thr Lys Pro Gln Val Glu Ser Gln Pro Thr Ser Leu Asn Glu
131                        485              490              495
132          Asp Leu Ile Asp Val Ser Ile Asp Ser Ser Asn Pro Val Phe Leu Glu
133                        500              505              510
134          Val Ile Asp Pro Ile Thr Asn Leu Gly Thr Leu Gln Leu Ile Asp Leu
135             515              520              525
136          Asn Thr Gly Val Arg Leu Lys Glu Ser Ala Gln Gln Gly Ile Gln Arg
137             530              535              540
138          Tyr Gly Ile Tyr Glu Arg Glu Lys Asp Leu Val Val Ile Lys Ile Asp
139          545              550              555                   560
140          Ser Gly Lys Ala Lys Leu Gln Ile Leu Asp Lys Leu Glu Asn Leu Lys
141                        565              570              575
142          Val Ile Ser Glu Ser Asn Phe Glu Ile Asn Lys Asn Ser Ser Leu Tyr
143                        580              585              590
144          Val Asp Ser Arg Met Ile Leu Val Val Val Lys Asp Asp Ser Asn Ala
145             595              600              605
146          Trp Arg Leu Ala Lys Phe Ser Pro Lys Asn Leu Asp Glu Phe Ile Leu
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147              610              615              620
148      Ser Glu Asn Lys Ile Leu Pro Phe Thr Ser Phe Ala Val Arg Lys Asn
149      625              630              635              640
150      Phe Ile Tyr Leu Gln Asp Glu Leu Lys Ser Leu Val Thr Leu Asp Val
151                      645              650              655
152      Asn Thr Leu Lys Lys Val Lys
153                      660
155 <210> SEQ ID NO: 6
156 <211> LENGTH: 13
157 <212> TYPE: PRT
158 <213> ORGANISM: Borrelia burgdorferi
159 <400> SEQUENCE: 6
160      Lys Ile Thr Asp Ser Asn Ala Thr Val Leu Ala Val Lys
161       1              5              10
163 <210> SEQ ID NO: 7
164 <211> LENGTH: 11
165 <212> TYPE: PRT
166 <213> ORGANISM: Borrelia burgdorferi
167 <400> SEQUENCE: 7
168      Asp Leu Phe Glu Ser Val Glu Gly Leu Leu Lys
169       1              5              10
171 <210> SEQ ID NO: 8
172 <211> LENGTH: 40
173 <212> TYPE: DNA
174 <213> ORGANISM: Borrelia burgdorferi
175 <400> SEQUENCE: 8
176      aaratwacwg aywcwaaygc wacwgtwytd gcwgtwaara                        40
178 <210> SEQ ID NO: 9
179 <211> LENGTH: 34
180 <212> TYPE: DNA
181 <213> ORGANISM: Borrelia burgdorferi
182 <400> SEQUENCE: 9
183      gayytdttyg arwcwgtwga rgghytdytd aara                             34
185 <210> SEQ ID NO: 10
186 <211> LENGTH: 639
187 <212> TYPE: DNA
188 <213> ORGANISM: Borrelia burgdorferi
189 <400> SEQUENCE: 10
190      atgaaaaaga atacattaag tgcgatatta atgactttat ttttatttat atcttgtaat   60
191      aattcaggga aggtggggat tctgcatcta ctaatcctgc tgacgagtct tgcgaaaggg  120
192      cctaatctta cagaaataag caaaaaaatt acagattcta atgcatttgt acttgctgtt  180
193      aaagaagttg agactttggt tttatctata gatgaacttg ctaagaaagc tattggtcaa  240
194      aaaatagaca ataataatgg tttagctgct ttaaataatc agaatggatc gttgttagca  300
195      ggagcctatg caatatcaac cctaataaca gaaaaattga gtaaattgaa aaatttagaa  360
196      gaattaaaga cagaaattgc aaaggctaag aaatgttccg aagaatttac taataaacta  420
197      aaaagtggtc atgcagatct tggcaaacag gatgctaccg atgatcatgc aaaagcagct  480
198      atttaaaaaa cacatgcaac taccgataaa ggtgctaaag aatttaaaga tttatttgaa  540
199      tcagtagaag gtttgttaaa agcagctcaa gtagcactaa ctaattcagt taaagaactt  600
200      acaagtcctg ttgtagcaga aagtccaaaa aaaccttaa                         639
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202 <210> SEQ ID NO: 11
203 <211> LENGTH: 212
204 <212> TYPE: PRT
205 <213> ORGANISM: Borrelia burgdorferi
206 <400> SEQUENCE: 11
207     Met Lys Lys Asn Thr Leu Thr Ala Ile Leu Met Thr Leu Phe Leu Phe
208     1               5                   10                  15
209     Ile Ser Cys Asn Asn Ser Gly Lys Val Gly Ile Leu Thr Ser Thr Asn
210                 20                  25                  30
211     Pro Ala Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys
212             35                  40                  45
213     Lys Ile Thr Asp Ser Asn Ala Phe Val Leu Ala Val Lys Glu Val Glu
214         50                  55                  60
215     Thr Leu Val Leu Ser Ile Asp Glu Leu Ala Lys Lys Ala Ile Gly Gln
216     65                  70                  75                  80
217     Lys Ile Asp Asn Asn Asn Gly Leu Ala Ala Leu Asn Asn Gln Asn Gly
218                 85                  90                  95
219     Ser Leu Leu Ala Gly Ala Tyr Ala Ile Ser Thr Leu Ile Thr Glu Lys
220                 100                 105                 110
221     Leu Ser Lys Leu Lys Asn Leu Glu Glu Leu Lys Thr Glu Ile Ala Lys
222             115                 120                 125
223     Ala Lys Lys Cys Ser Glu Glu Phe Thr Asn Lys Leu Lys Ser Gly His
224         130                 135                 140
225     Ala Asp Leu Gly Lys Gln Asp Ala Thr Asp Asp His Ala Lys Ala Ala
226     145                 150                 155                 160
227     Ile Leu Lys Thr His Ala Thr Thr Asp Lys Gly Ala Lys Glu Phe Lys
228                 165                 170                 175
229     Asp Leu Phe Glu Ser Val Glu Gly Leu Leu Lys Ala Ala Gln Val Ala
230                 180                 185                 190
231     Leu Thr Asn Ser Val Lys Glu Leu Thr Ser Pro Val Val Ala Glu Ser
232             195                 200                 205
233     Pro Lys Lys Pro
234         210
236 <210> SEQ ID NO: 12
237 <211> LENGTH: 680
238 <212> TYPE: DNA
239 <213> ORGANISM: Borrelia burgdorferi
240 <400> SEQUENCE: 12
241     atgaaaaaat atttattggg aataggtcta atattagcct taatagcatg caagcaaaat    60
242     gttagcagcc ttgatgaaaa aaacagcgct tcagtagatt tgcctggtga gatgaaagtt   120
243     cttgtaagta aagaaaaaga caaagacggt aagtacagtc taaaggcaac agtagacaag   180
244     attgagctaa aaggaacttc tgataaagac aatggttctg gggtgcttga aggtacaaaa   240
245     gatgacaaaa gtaaagcaaa attaacaatt gctgacgatc taagtaaaac cacattcgaa   300
246     cttttcaaag aagatggcaa aacattagtg tcaagaaaag taagttctaa agacaaaaca   360
247     tcaacagatg aaatgttcaa tgaaaaaggt gaattgtctg caaaaaccat gacaagagaa   420
248     aatggaacca aacttgaata tacagaaatg aaaagcgatg gaaccggaaa agctaaagaa   480
249     gttttaaaaa actttactct tgaaggaaaa gtagctaatg ataaagtaac attggaagta   540
250     aaagaaggaa ccgttacttt aagtaaggaa attgcaaaat ctggagaagt aacagttgct   600
251     cttaatgaca ctaacactac tcaggctact aaaaaaactg gcgcatggga ttcaaaaact   660
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VERIFICATION SUMMARY
PATENT APPLICATION: **US/10/762,665**

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